

PATENT

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**FAULT DETECTION AND ISOLATION IN AN OPTICAL NETWORK****ABSTRACT OF THE DISCLOSURE**

A system for detecting faults in an optical network having switching nodes and amplifier nodes is provided. According to one aspect of the system, one or more amplifier nodes are coupled between two switching nodes. Each amplifier node is capable of detecting a fault condition, such as a loss-of-signal (LOS) condition, on an incoming line. Upon detecting the LOS condition, the amplifier node generates a fault report which is then forwarded to a switching node. The switching node uses information from the fault report to initiate switching actions, if any, to restore traffic. According to another aspect of the system, each amplifier node is configured to receive a fault report received from another amplifier node and forward such fault report to a switching node. Each amplifier node is further configured to prioritize a fault condition identified in a fault report received from another amplifier node and the fault condition detected on its incoming line.

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